IN THE CLAIMS

1. (Previously Presented) A permanent magnet generator comprising:

an exciter mainframe comprising at least one exciter element; and

a permanent magnet subassembly comprising a plurality of magnets that are arranged to form at least one air gap between facing magnetic poles in which the at least one exciter resides, the plurality of magnets comprising a first toroidal magnet of the plurality of magnets having a first magnetic pole and a second magnetic pole, and a second toroidal magnet of the plurality of magnets having a first magnetic pole and a second magnetic pole, the first and second magnetic poles of the second magnet facing the magnetic poles of the first magnet;

wherein the plurality of magnets are reconfigurable for alternating current operation wherein the magnetic poles of the first magnet are opposite in polarity to the magnetic poles of the second magnet to induce current in a first direction for a first 180 degrees and in a second opposite for the other 180 degrees of a 360 degree rotation of the permanent magnet subassembly, or direct current operation wherein the magnetic poles of the first magnet are matched in polarity to the magnetic poles of the second magnet to induce current in a single direction for the entire 360 degrees of rotation of the permanent magnet subassembly.

2. (Previously Presented) The permanent magnet generator of claim 1,

wherein the first magnetic pole of the first magnet and the first magnetic pole of the second magnet face to form a first air gap in which a first at least one exciter element resides, and wherein the second magnetic pole of the first magnet and the second magnetic pole of the second magnet face to form a second air gap in which a second at least one exciter element resides.

3. (Previously Presented) The permanent magnet generator of claim 1, wherein the at least one exciter mainframe comprises at least 90 exciter elements configured side by side in a 360-degree ring with a uniform separation between each exciter element.

4. (Previously Presented) The permanent magnet generator of claim 1, wherein the at least one exciter mainframe comprises at least 120 exciter elements configured side by side in a 360-degree ring with a uniform separation between each exciter element.

5. (Previously Presented) The permanent magnet generator of claim 2, wherein the first magnet comprises at least a first segment and a second segment, and wherein the second magnet comprises at least a first segment and a second segment.

6. (Original) The permanent magnet generator of claim 1, wherein each of the plurality of magnets comprises a plurality of reconfigurable magnet segments.

7. (Previously Presented) The permanent magnet generator of claim 5, wherein:

the first magnetic pole of the first magnet and the second magnetic pole of the second magnet are of a first polarity;

the second magnetic pole of the first magnet and the first magnetic pole of the second magnet are of a second polarity, wherein the second polarity is opposite the first polarity such that the facing magnetic poles have opposite polarities; and

the at least first and second opposing segments of each the first magnet and the second magnet have matched abutting magnetic poles such that the permanent magnet generator operably produces a direct current output.

8. (Previously Presented) The permanent magnet generator of claim 5, wherein:

the first magnetic pole of the first magnet and the second magnetic pole of the second magnet are of a first polarity; and

the second magnetic pole of the first magnet and the first magnetic pole of the second magnets are of a second polarity, wherein the second polarity is opposite the first polarity such that the facing magnetic poles have opposite polarities; and

wherein the at least first and second segments of each the first magnet and the second magnet have inverse abutting magnetic poles such that the permanent magnet generator operably produces an alternating current output.

9. (Previously Presented) The permanent magnet generator of claim 1, wherein the at least one exciter element further comprises:

a conductive core;

a helical lead wire; and

a plurality of alternating layers of a first material and a second material.

10. (Original) The permanent magnet generator of claim 9, wherein the first material comprises a superconductive material and the second material comprises a non-superconductive material, and wherein the layers of the superconductive material are thin relative to the thickness of the layers of the non-superconductive material.

11. (Previously Presented) The permanent magnet generator of claim 10, wherein the exciter mainframe further comprises a coolant enclosure, wherein the coolant enclosure operably communicates with the exciter mainframe to communicate a coolant to at least one exciter element, and wherein the coolant enclosure encloses a coolant.

12. (Previously Presented) The permanent magnet generator of claim 1, wherein the permanent magnet subassembly further comprises:

an external magnet comprising a first magnetic pole and a second magnetic pole, wherein the first magnetic pole and the second magnetic pole oppose each other to form the air gap in which the at least one exciter element resides; and

a secondary internal magnet.

13. (Previously Presented) The permanent magnet generator of claim 12, wherein the first magnet is chosen from a set consisting of: a unitary magnet, a two segment magnet assembly, a four segment magnet assembly, or an eight segment magnet assembly.

14. (canceled)

15. (Previously Presented) The permanent magnet generator of claim 13, wherein each segment has a first magnetic pole of a first polarity and a second magnetic pole of a second polarity, and wherein the first polarity is comparatively opposite the second polarity, and wherein the first magnetic pole of each segment is adjacent to the second magnetic pole of an abutting segment, and wherein the permanent magnet generator operably produces alternating current.

16. (Previously Presented) The permanent magnet generator of claim 13, wherein each segment has a first magnetic pole of a first polarity and a second magnetic pole of a second polarity, and wherein the first polarity is comparatively opposite the second polarity, and

wherein the first magnetic pole of each adjacent segment is uniform to the first magnetic pole of an adjacent segment, and wherein the permanent magnet generator operably produces direct current.

17. (Original) The permanent magnet generator of claim 12, further comprising a housing, wherein the housing further comprises a plurality of teeth disposed on an interior circumferential surface of the housing, and wherein the plurality of teeth engage a plurality of notches disposed on an exterior circumferential surface of the external magnet to operably hold the external magnet in place relative to the housing.

18. (Previously Presented) A permanent magnet generator comprising:

a permanent magnet subassembly comprising a first toroidal magnet and a second toroidal magnet arranged to form at least one air gap between facing magnetic poles of the first and the second magnets, wherein the plurality of magnets are reconfigurable for alternating current operation wherein the magnetic poles of the first magnet are opposite in polarity to the magnetic poles of the second magnet to induce current in a first direction for a first 180 degrees and in a second opposite for the other 180 degrees of a 360 degree rotation of the permanent magnet subassembly, or direct current operation wherein the magnetic poles of the first magnet are uniform in polarity to the magnetic poles of the second magnet to induce current in a single direction for the entire 360 degrees of rotation of the permanent magnet subassembly; and

an exciter mainframe subassembly comprising at least one exciter element residing in the at least one air gap.

19. (Original) The permanent magnet generator of claim 18, wherein the first magnet and the second magnet each comprise a plurality of reconfigurable magnet segments.

20. (Previously Presented) The permanent magnet generator of claim 18, wherein the first magnet comprises a first inward-facing magnetic pole and a second inward-facing magnetic pole, wherein the second magnet comprises a first outward-facing magnetic pole and a second outward-facing magnetic pole, wherein the first magnetic poles form a first air gap and the second magnetic poles form a second air gap, and wherein a first at least one exciter element resides in the first air gap and a second at least one exciter element resides in the second air gap.

21. (Previously Presented) The permanent magnet generator of claim 18, wherein the at least one exciter element comprises alternating layers of a superconductive material and a non-superconductive material.

22. (Previously Presented) The permanent magnet generator of claim 18, wherein the first magnet comprises an external magnet having a first magnetic pole and a second magnetic pole opposed to form the at least one air gap, wherein the second magnet comprises an internal magnet, and wherein the at least one exciter element resides in the air gap.

23. (Previously Presented) The permanent magnet generator of claim 22, wherein the at least one exciter element comprises alternating layers of a superconductive material and a non-superconductive material.

24. (Previously Presented) A permanent magnet generator comprising:

an exciter mainframe;

a first at least one exciter element coupled to the exciter mainframe and residing in a first air gap, the first at least one exciter element coupled to at least one short helical lead wire;

a second at least one exciter element coupled to the exciter mainframe and residing in a second air gap, the second at least one exciter element coupled to at least one short helical lead wire;

a first reconfigurable magnet;

a second reconfigurable magnet;

a connecting arm coupled to the first reconfigurable magnet and the second reconfigurable magnet; and

a drive shaft coupled to the connecting arm; and

wherein the first reconfigurable magnet includes a first magnet having a first magnetic pole and a second magnetic pole, and the second reconfigurable magnet includes a first magnetic pole and a second magnetic pole, the first and second magnetic poles of the first magnet facing the magnetic poles of the first reconfigurable magnet.

25. (Previously Presented) A permanent magnet generator comprising:

a mainframe;

a first at least one exciter coupled to the mainframe and residing in a first air gap, the first at least one exciter coupled to at least one lead wire;

a second at least one exciter coupled to the mainframe and residing in a second air gap, the second at least one exciter coupled to at least one lead wire;

a first reconfigurable magnet;

a second reconfigurable magnet;

a connecting arm coupled to the first reconfigurable magnet and the second reconfigurable magnet; and

a drive shaft coupled to the connecting arm;

wherein the at least one exciter comprises alternating layers of a superconductive material and a non-superconductive material.

26. (Original) The permanent magnet generator of claim 24, wherein the first reconfigurable magnet and the second reconfigurable magnet each comprise a plurality of reconfigurable magnet segments.

27. (Previously Presented) A permanent magnet generator comprising:

a housing;

a drive shaft;

a reconfigurable external magnet coupled to the drive shaft and enclosed by the housing;

an internal magnet coupled to the drive shaft; and

at least one exciter element residing in an air gap defined by the external magnet, the at least one exciter element coupled to at least one short helical lead wire.

28. (Previously Presented) A permanent magnet generator comprising:

a housing;

a drive shaft;

a reconfigurable external magnet coupled to the drive shaft and enclosed by the housing;

an internal magnet coupled to the drive shaft; and

at least one exciter residing in an air gap defined by the external magnet, the at least one exciter element coupled to at least one lead wire;

wherein the at least one exciter comprises alternating layers of a superconductive material and a non-superconductive material.

29. (Original) The permanent magnet generator of claim 27, wherein the reconfigurable external magnet comprises a plurality of reconfigurable magnet segments.

30. (Previously Presented) An exciter configuration of a permanent magnet generator wherein the exciter configuration comprises:

an exciter mainframe;

at least one exciter element coupled to the mainframe; and

at least one short helical lead wire, the at least one short helical lead wire coupled to the at least one exciter element.

31. (Previously Presented) The exciter configuration of claim 30, wherein the at least one exciter mainframe comprises at least 90 exciter elements.

32. (Previously Presented) The exciter configuration of claim 30, wherein the at least one exciter mainframe comprises at least 120 exciter elements.

33. (Original) The exciter configuration of claim 30, wherein the at least one exciter further comprises a plurality of alternating layers of a first material and a second material, wherein the layers of the first material are thin relative to the layers of the second material.

34. (Previously Presented) An exciter configuration of a permanent magnet generator wherein the exciter configuration comprises:

a frame;

at least one exciter coupled to the frame; and

at least one lead wire, the at least one lead wire coupled to the at least one exciter;

wherein the at least one exciter further comprises a plurality of alternating layers of a first material and a second material, wherein the layers of the first material are thin relative to the layers of the second material; and wherein the first material comprises a superconductive material and the second material comprises a non-superconductive material.

35. (Previously Presented) A method for generating electric energy using a reconfigurable permanent magnet generator comprising:

selecting an alternating current or a direct current generation mode;

configuring at least one reconfigurable magnet to correspond with the selected generation mode;

disposing at least one exciter in an air gap defined by the at least one reconfigurable magnet; and

rotating the at least one reconfigurable magnet relative to the at least one exciter;

wherein the reconfigurable permanent magnet generator comprises a plurality of magnets that are arranged to form at least one air gap between facing magnetic poles in which the at least one exciter resides, the plurality of magnets comprising a first toroidal magnet of the plurality of magnets having a first magnetic pole and a second magnetic pole, the first and second magnetic poles of the first magnet facing inwardly, and a second toroidal magnet of the plurality of magnets having a first magnetic pole and a second magnetic pole, the first and second magnetic poles of the second magnet facing outwardly toward the inward-facing magnetic poles of the first magnet, and wherein selecting an alternating current or a direct current generation mode comprises:

arranging the magnetic poles of the first magnet opposite in polarity to the magnetic poles of the second magnet to induce current in a first direction for a first 180 degrees and in a second opposite for the other 180 degrees of a 360 degree rotation of the permanent magnet generator for alternating current operation, and arranging the magnetic poles of the first magnet are matched in polarity to the magnetic poles of the second magnet to uniformly induce current in a single direction for the entire 360 degrees of rotation of the permanent magnet generator for direct current operation.

36. (Original) The method of claim 35 further comprising:

mounting a plurality of reconfigurable permanent magnet generators on a single spindle; and

generating a plurality of electric energy outputs.

37. (Original) A permanent magnet generator comprising:

permanent magnet means defining at least one air gap, the permanent magnet means reconfigurable for alternating current or direct current generation;

exciter means residing in the at least one air gap for conducting induced current; and

drive means for rotating the permanent magnet means relative to the exciter means to induce current flow in the exciter means and generate electric energy.

38. (Original) The permanent magnet generator of claim 37, wherein the permanent magnet means comprise at least a first reconfigurable magnet and a second reconfigurable magnet.

39. (Original) The permanent magnet generator of claim 38, wherein the first reconfigurable magnet and the second reconfigurable magnet each comprise a plurality of reconfigurable magnet segments.

40. (Previously Presented) The permanent magnet generator of claim 2, wherein the first magnet is chosen from a set consisting of: a unitary magnet, a two segment magnet assembly, a four segment magnet assembly, or an eight segment magnet assembly.